CLAIMS

WHAT IS CLAIMED IS:

1. A method of measuring a resistance of a transfer roller, comprising:

driving a transfer belt supported by plural rollers and disposed in a transfer unit which transfers an image from a photoconductive medium onto a recording medium; and

calculating a resistance of the transfer roller while rotating the transfer belt at least one revolution.

2. The method of claim 1, wherein the calculating of the resistancecomprises:

applying a testing voltage to the transfer belt ;

regularly measuring an electric current from the transfer roller corresponding to the testing voltage;

counting the number of times the electric current is measured; and

obtaining the resistance from the testing voltage and the measured electric current.

3. The method of claim 2, wherein the calculating of the resistancecomprises:

comparing the number of measurements with a preset reference value; and

calculating an average resistance if the number of measurement is equal to or greater than the reference value.

4. The method of claim 3, wherein the reference value is obtained by dividing a time for the transfer belt to rotate at least one revolution by a period of the number of measurements.

5. A method of applying a voltage to a transfer roller of an image transfer unit including a transfer roller and a transfer belt, comprising:

variably applying a voltage to the transfer roller according to an average resistance of the transfer roller during one rotation of the transfer belt.

6. The method of claim 5, wherein the operation of variably applying a voltage comprises:

counting a number of times a test voltage is applied to the transfer roller during one rotation of the transfer belt;

measuring currents of the transfer roller a number of times corresponding to the number of times at which the test voltage is applied to the transfer roller;

determining an average resistance of the transfer roller by calculating a resistance from the currents measured and the test voltage value for each time the test voltage is applied to the transfer roller, adding each resistance together, and dividing the result by the number of times the test voltage has been applied to the transfer roller during one rotation of the transfer belt; and

controlling the voltage applied to the transfer roller according to the determined average resistance.

7. A method of applying a voltage to a transfer roller of an image transfer unit including a transfer roller and a transfer belt, comprising:

variably applying a voltage to the transfer roller according to an average resistance of the transfer roller during a number of rotations (n) of the transfer belt.

8. The method of claim 5, wherein the operation of variably applying a voltage comprises:

counting a number of times a test voltage is applied to the transfer roller during n rotations of the transfer belt;

measuring currents of the transfer roller a number of times corresponding to the number of times at which the test voltage is applied to the transfer roller;

determining an average resistance of the transfer roller by calculating a resistance from the currents measured and the test voltage value for each time the test voltage is applied to the transfer roller, adding each resistance together, and dividing the result by the number of times the test voltage has been applied to the transfer roller during n rotations of the transfer belt; and

controlling the voltage applied to the transfer roller according to the determined average resistance.

9. A method of measuring a resistance of a transfer roller, the method comprising:

applying test voltages to different areas of a transfer belt through the transfer roller; and

calculating a resistance of the transfer roller according to the test voltage and a current corresponding to the applied voltage.

10. The method of claim 9, further comprising:

rotating the transfer belt so that the test voltages are applied to different areas of the transfer belt.

11. The method of claim 9, wherein the applying of the test voltage comprises:

applying two test voltages to the transfer roller electrically connected to the transfer belt.

12. The method of claim 9, wherein the applying of the test voltage comprises:

choosing specific areas of the transfer belt in which test voltages are not to be applied through the transfer roller.

13. The method of claim 9, wherein the calculating of the resistance comprises:

obtaining the current in association with the different areas of the transfer belt.